

DETAILED ACTION

1. Claims 1-17 and 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, Claim 1 is indefinite as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are the connections between the finite field multipliers and finite field adders. Further, the input the claimed invention, what receives the input, and how the respective output coefficients are provided are also unclear. claim 24 also has a similar problem.

As claims 21-23, it is unclear from what starts the recited number of lock cycles are.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-17 and 21-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter

Claims 1-17 and 21-24 are directed an invention that merely performs calculations and manipulations of data. In order for such a claimed invention that merely performs calculations and manipulations of data to be statutory, the claimed invention must accomplish a practical application, and is not directed to a preemption of a calculation and/or manipulation data. That is

the claimed invention must transform an article or physical object to a different state or thing, or produce a useful, concrete and tangible result and not cover every substantial practical application. See *State Street* 47 USPQ2d, *Benson* 175 USPQ, and “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility”, OG Notices: 22 November 2005. It is clear from claims 1-17 and 21-24 that the claimed invention merely involves in calculations and manipulations of data. They do not transform an article or physical object to a different state or thing. The input are numbers and the output are also number. The result produced by the inventions as recited in the claimed invention does not have a real world value but merely numerical values in mathematical expression, without a practical application recited in the claims that makes the result useful, concrete and tangible. Therefore, claims 1-17 and 21-24 are directed to non-statutory subject matter as the claimed invention fails to accomplish a practical application. Further, since the claims appear to cover every substantial practical application, they are also directed to a preemption of the claimed manipulations and calculations of data.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

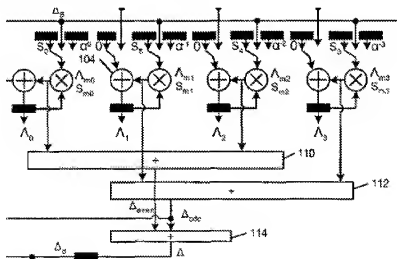
A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-3,5-17 and 21-23 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yu et al. (7,051,267).

As per claims 1,2,5,7,9,10, and 21-24, Yu et al discloses in figure 9 a circuit a part of which, as illustrated below, is viewed as a data processing system that clearly includes a $t+1$ arithmetic units ($t=3$), each including at least one finite field multiplier (Λ_m) for perform finite field multiplication and at least one finite field adder (104) for performing finite field addition, means (feedback path to the multiplier or to the adder) to use a previous finite field arithmetic calculation result of the first arithmetic unit in a current finite filed arithmetic calculation of the first arithmetic unit, and at least one finite field adder 110,112,114) for combining respective finite field arithmetic calculation results of respective current finite field arithmetic calculations of at least two of the arithmetic units, wherein the system as illustrated below clearly has $2t+1$ adders and no more than $t+1$ finite filed multipliers as claimed.



As per claims 3,6,8 and 11-13, Yu also disclose the multiplication of an error locator polynomial (Λ) and a previous step discrepancy (Δ_B) by the multiplier (Λ_m), and adding multiplication results by the adder (104)

As per claims 14-17, Yu also disclose a calculation of an error evaluator polynomial (see Col. 7, lines 17-22).

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis, Jr. A. Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong D Ngo/
Primary Examiner, Art Unit 2193

08/10/2008

